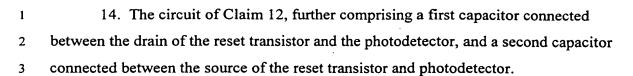
CLAIMS

What is claimed is:

1	1. A single photon read-out circuit comprising:
2	a feed-back enhanced reset amplifier;
3	a photodetector connected to an output of the reset amplifier; and
4	a high-gain amplifier connected to the photodetector.
1	2. The circuit of Claim 1, wherein the high-gain amplifier comprises:
2	an adaptive skimming circuit having an integration capacitor
1	3. The circuit of Claim 2, further comprising a source follower transistor
2	connected to the output of the input transistor.
1	4. The circuit of Claim 3, further comprising an access transistor connected
2	between the input transistor and a bus.
1	5. The circuit of Claim 4, wherein the reset amplifier comprises a CMOS
2	inverter.
1	6. The circuit of Claim 5, further comprising a reset transistor.
1	7. The circuit of Claim 6, further comprising a sample-and-hold transistor and
2	a sample-and-hold capacitor.
1	8. The circuit of Claim 5, wherein the reset amplifier further comprises an
2	autozero transistor, a first capacitor, and a second capacitor.
1	9. The circuit of Claim 5, wherein the reset amplifier further comprises a
2	current source shared by all pixels on a bus.
1	10. A focal plane array (FPA) having a plurality of pixel cells, each pixel cell
2	comprising:
3	a feed-back enhanced reset amplifier;
4	a photodetector connected to an output of the reset amplifier; and
5	a high-gain amplifier connected to the photodetector, the high-gain
6	amplifier comprising:

7	an input transistor;
8	a current source transistor connected to the input transistor;
9	a reset transistor connected to the current source transistor; and
10	an adaptive skimming circuit having an integration capacitor;
11	wherein the reset amplifier reduces kTC noise, and the high-gain
12	amplifier nulls current associated with the photodetector to reduce signal non-
13	uniformity.
1	11. An amplifier circuit for single photon read-out of photodetectors in an
2	imaging array, the circuit comprising:
3	detector means for converting incident light to an input electric signal;
4	reset amplifier means connected to the detector means for suppressing
5	kTC noise, and
6	a high-gain amplifier means .connected to the detector means for
7	reducing signal non-uniformity.
1	12. A single photon read-out circuit comprising:
2	a detector;
3	a reset transistor having a drain connected to the detector;
4	an inverter amplifier connected between the drain of the reset transistor
5	and a source of the reset transistor;
6	an input transistor having a source connected to the detector;
7	a current source transistor having a drain connected to a drain of the
8	input transistor; and
9	an adaptive skimming circuit connected to the current source transistor,
10	the adaptive skimming circuit comprising an integration capacitor.
1	13. The circuit of Claim 12, further comprising a source follower transistor
2	having a source connected to the drain of the input transistor.



1 15. The circuit of Claim 14, further comprising a current source, shared by all pixels on a bus, connected to the reset transistor and the inverter amplifier.